



Relationship between independent variables and Technological gap among coconut growers

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Received: 28 Apr 2025; Received in revised form: 23 May 2025; Accepted: 27 May 2025; Available online: 03 Jun 2025

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Abstract— The current investigation or study was done in the district called Tumkur district of Karnataka during the year 2022–23, using an ex-post-facto research design to explore the factors influencing the technological gap in coconut cultivation. Purposively Tumkur was chosen due to its prominence as a major coconut-producing region in the state. From the ten taluks in the district, four taluks namely Tiptur, Turuvekere, Chikkanayakanahalli, and Sira were chosen based on differences in productivity levels. A total of 120 coconut growers, with 30 from each selected taluk, were randomly sampled for the research or study. Correlation was utilized to identify significant relationships between the selected dependent variable and variables called as the independent variables. Thus, in the relationship study between independent variables and the technological gap, it was disclosed that education, information seeking behaviour, extension participation, credit orientation, innovativeness, deferred gratification, scientific orientation and cosmopolitaness were seen to be negatively related with technological gap at one per cent significant or significance level whereas the management orientation and risk orientation seen to be negatively related with technological gap at five per cent significant or significance level while age, family size, land holdings and farming experience were found to have non-significant relationship with the technological gap.

Keywords— Coconut growers, Independent variables, Relationship, Technological gap, Tumkur



I. INTRODUCTION

In the context of agricultural development, the adoption of recommended technologies plays a crucial role in enhancing productivity and ensuring sustainable farming practices. Despite the availability of advanced cultivation methods, a considerable gap often exists between what is recommended and what is actually practiced by farmers. This disparity, referred to as the technological gap, can significantly impact crop yield and resource efficiency. Understanding the underlying factors contributing to this gap is essential for designing targeted interventions and improving the adoption of innovations. Coconut farming, being a vital component of the agrarian economy in several regions, particularly in Karnataka, has shown considerable potential for growth. However, many coconut growers continue to face challenges in fully implementing

scientific cultivation practices. Various socio-economic, psychological and communication-related factors may influence a farmer's ability and willingness to adopt new technologies. By examining the relationship between such independent variables and the existing technological gap, researchers and policymakers can gain insights into the constraints and motivations that drive farmer behavior. This study aims to identify which farmer-related factors are significantly associated or having relationship with the technological gap in coconut cultivation. Such an analysis is critical for formulating appropriate extension strategies and policy measures that can bridge this gap, thereby promoting more effective and widespread adoption of improved farming techniques, thereby improving the socio-economic status of the coconut growers.

II. MATERIALS AND METHODS

The current investigation or study was done in the district called Tumkur district of Karnataka during the year 2022–23, employing an ex-post-facto research design. Tumkur was deliberately selected as the study area due to its prominence in coconut cultivation across several of its taluks, making it one of the leading coconut-producing districts in the state. Based on variations in productivity levels, four taluks—Tiptur, Turuvekere, Chikkanayakanahalli, and Sira—were purposively chosen from the ten taluks within the district. From each selected taluk, thirty coconut farmers were randomly chosen using a simple random sampling technique, resulting in a total sample size of 120 coconut growers. Fourteen attributes like the Age, Education, Family size, Land holding, Farming experience, Information seeking behavior, Extension participation, Management orientation, Risk orientation, Credit orientation, Innovativeness, Deferred gratification, Scientific orientation and Cosmopolitaness were selected as independent variables in the study and Technological gap was selected as one of the dependent variables in the study. Technological gap refers to the difference between the recommended technology and the actual technology used by the coconut growers at field level (Nagaraj, 1999) [2]. Then the correlation was used to know the significant relationship between these dependent and independent variables.

III. RESULTS AND DISCUSSION

3.1 Relationship between independent variables and Technological gap among coconut growers

Among the relationship or association between variables called as the independent variables and the technological gap shown in table 1, it was found that education, information seeking behaviour, extension participation, credit orientation, innovativeness, deferred gratification, scientific orientation, cosmopolitaness were negatively related with technological gap at one per cent level of significance, whereas the management orientation, risk orientation were negatively related with technological gap at five per cent level of significance. This indicates that as these variables decreased the technological gap increased leading to higher gap in taking up the recommended cultivation practices in coconut farming while age, family size, land holdings, farming experience were non-significant with respect to technological gap meant that these variables had no contribution towards the existing technological gap among the coconut growers. In a similar study by Patel and Padheria (2010) [4], it was revealed that there was non-significant relationship between age and technological gap of Safflower growers. Another similar

study by Neha (2014) [3], revealed that there was non-significant relationship between family size and technological gap of rose growers and there was non significant and negative association or relationship between land holding and technological gap of rose growers.

Education: The negative relationship between education and the technological gap suggests that lower levels of education among coconut growers are associated with an increased technological gap. Less educated individuals might have poor access to information, be less open to innovation, and have less problem-solving skills, discouraging them unable to adopt new technologies more readily. A similar study by Jadhav (2009) [1], observed that there was negatively and significant relationship between education and technological gap of mango growers. Another study by Patel and Padheria (2010) [4], revealed that there was negatively and significant association or relationship between education and technological gap of Safflower growers. One more similar study by Neha (2014) [3], revealed a finding that there was negative and highly significant relationship between variable called education and technological gap of rose growers.

Information Seeking Behavior: A negative correlation between information seeking behavior and the technological gap implies that growers who are less active to seek out information are likely to have a more technological gap. Less information seekers are less likely to be aware of advancements, best practices, and market trends, which can increase the gap towards modern agricultural practices.

Extension Participation: Extension services provide valuable information and training, enabling coconut growers to enhance their knowledge, attitude and skills, which in turn can reduce the technological gap. But the negative relationship between extension participation and the technological gap suggests that those who might not engage with agricultural extension services are less likely to adopt new technologies. A similar study by Jadhav (2009) [1], observed that there was negatively and significant relationship between extension participation and technological gap of mango growers.

Credit Orientation: As the credit orientation found medium to low among the coconut growers which showed that there was negative correlation between credit orientation and the technological gap implying that growers who are less willing to use credit are not positioned well to invest in new technologies.

Innovativeness: The negative association between innovativeness and the technological gap indicates that

coconut growers are less open to innovation which might contributed to their existing technological gap.

Deferred Gratification: The negative relationship between deferred gratification and the technological gap suggests that individuals who neglect long-term benefits over immediate gains are less likely to invest in modern technologies.

Scientific Orientation: The negative correlation between scientific orientation and the technological gap implies that medium to low scientific orientation might contributed to the found technological gap. A similar study by Neha (2014) [3], revealed that there was negative and significant association or relationship between scientific orientation and technological gap of rose growers.

Cosmopoliteness: The negative association between cosmopoliteness and the technological gap suggests that the medium level of cosmopoliteness might have influence with the technological gap.

Table 1: Relationship between independent variables and Technological gap among Coconut growers (n=120)

Sl. No.	Independent variable	Correlation co-efficient (r)
1	Age	-0.98NS
2	Education	-0.235**
3	Family Size	-0.054NS
4	Land-holdings	-0.155NS
5	Farming experience	-0.004NS
6	Information seeking behaviour	-0.408**
7	Extension participation	-0.382**
8	Management orientation	-0.184*
9	Risk orientation	-0.232*
10	Credit orientation	-0.243**
11	Innovativeness	-0.363**
12	Deferred gratification	-0.327**
13	Scientific orientation	-0.257**
14	Cosmopoliteness	-0.334**

*=5% level of significance, **=1% level of significance and NS=Non-significant

Management Orientation: Lower management orientation of the coconut growers may have contribution towards the higher technological gap among the coconut growers.

Risk Orientation: The negative correlation between risk orientation and the technological gap implies that those who are less willing to take risks are less positioned to adopt innovative technologies.

IV. CONCLUSION

The findings of the study highlight that certain personal, psychological and behavioral characteristics of farmers play a significant role in influencing the technological gap in coconut cultivation. This indicates that significant levels of these factors are associated with technological gaps, suggesting that farmers who are more informed, innovative and outward-looking are more likely to adopt recommended cultivation practices. By addressing these key influencing factors, policymakers and extension agencies can work more effectively to reduce the technological gap and promote the adoption of improved agricultural practices in coconut farming.

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